

Claims

1. A non-power source type monitor device in a non-power source type security device in which a power of the security device for monitoring whether the door or the window of a building is opened or closed, whether a person enters or exits from a building or a room, or whether a vehicle parks in or leaves from a parking place is supplied by a piezoelectric power generating device using a piezoelectric ceramics member, said piezoelectric power generating device generating power by applying a distortion deformation to the piezoelectric ceramics member, said piezoelectric power generating device comprising:

a pair of piezoelectric ceramics members;

a cushion material for holding each of the piezoelectric ceramics members under a soft state in which the natural oscillation of each piezoelectric ceramics member is hardly transmitted to other structural members;

a pendulum member oscillating through one elastic member in accordance with an excitation;

a pair of the other elastic members fixed to both the ends of the one elastic member and extending in a direction perpendicular to the one elastic member; and

hard striking members respectively fixed to the end parts of the pair of the other elastic members to alternately strike the pair of the piezoelectric ceramics members and apply an impact respectively to the piezoelectric ceramics members; wherein during the oscillation of the pendulum member, a striking operation that one striking member of the pair of the striking members strikes one piezoelectric ceramics member of the pair of the piezoelectric ceramics members and a separating operation that the other striking member of the pair of the striking members is separated from the other piezoelectric ceramics member of the pair of the piezoelectric ceramics members are continuously alternately repeated to continuously generate power.

2. The non-power source type monitor device according to claim 1, wherein the one elastic member is made of a rectangular plate shaped leaf spring or a coil spring and the pair of the other elastic members is made of a cylindrical rod spring, a rectangular leaf spring or a coil spring.

3. The non-power source type monitor device according to claim 2, wherein during the oscillation of the pendulum member, the pair of the other elastic

members forms an intermittent mechanism for continuously alternately repeating the striking operation and the separating operation of each striking member relative to each piezoelectric ceramics member.

4. A non-power source type monitor device in a non-power source type security device in which a power of the security device for monitoring whether the door or the window of a building is opened or closed, whether a person enters or exits from a building or a room, or whether a vehicle parks in or leaves from a parking place is supplied by a piezoelectric power generating device using a piezoelectric ceramics member, said piezoelectric power generating device generating power by applying a distortion deformation to the piezoelectric ceramics member, said piezoelectric power generating device comprising:

at least one piezoelectric ceramics member;

a cushion material for holding the piezoelectric ceramics member under a soft state in which the natural oscillation of the piezoelectric ceramics member is hardly transmitted to other structural members;

a base member made of a spring material;

a pair of elastic members fixed to the base member; and

hard striking members respectively fixed to both the end parts of the pair of the elastic members to strike the piezoelectric ceramics member and apply an impact to the piezoelectric ceramic member; wherein an external force is exerted on one of the striking members so that the other striking member continuously repeats a vertical oscillation due to a resonance operation.

5. The non-power source type monitor device according to claim 4, wherein the pair of elastic members has the same length from the base member and is fixed to the base member and the striking members fixed to both the end parts of the base member have substantially the same form and weight.

6. The non-power source type monitor device according to either claim 4 or claim 5, wherein the pair of the elastic members are connected integrally to the base member by using any of means of screwing, caulking, an adhesive or welding.